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A new species of *Acrosathe* (Diptera, Therevidae) from the Baltic Islands

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A new species, *Acrosathe baltica* n. sp., from the Baltic Islands is described and figured. It is compared with the closely related species *A. sybarita* Loew from south and southeast Europe and the in the area common species *A. annulata* Fabricius.

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In 1986, Lyneborg revised the Old World species of the genus *Acrosathe* Irwin & Lyneborg, 1981. Of the nine species treated four had an eastern palaearctic distribution, found in The Far East Territory of the U. S. S. R., China, Japan and Taiwan, one was known only from West Siberia and Kazakhstan, while two had a southern European distribution, South Spain resp. Italy and the South European Territory of the U. S. S. R. Only one species, *A. annulata* Fabricius, was found to have a wide European distribution. In 1988, Nagatomi & Lyneborg described further two species from Japan.

A. annulata was divided into four geographical races supposed to have developed in different Mediterranean refugia during the pleistocene glaciations (Lyneborg 1986:112). The race (form) A was found in Denmark, Fennoscandia, East and Central Europe south to the black sea, Rumania, North Greece and Northwest Italy. In Sweden *annulata* form A has been recorded from the provinces Sk, Bl, Ha, Sm, Ö, G, Bo, Dr, Å, Nb, and Ly. It has been regarded as a species restricted to sandy coastal localities. Ardö (1957:168) found it bound to the marine shore dune ecosystem. In Sweden it is found also in a number of sandy inland localities, some of which are

clearly connected to old sea shores, developed during various periods of the deglaciation era. In 1987, Mikael Sörensson (Sörensson 1989) made a survey of the insect fauna of the sand dune area Ulla Hau in the small island Fårön, at the north end of the Baltic island Gotland. I was entrusted the determination of the Diptera from this investigation and found to my surprise that the material of *Acrosathe* did not, as expected, belong to *annulata* but to a species closer related to *A. sybarita* Loew. It will be described as new below.

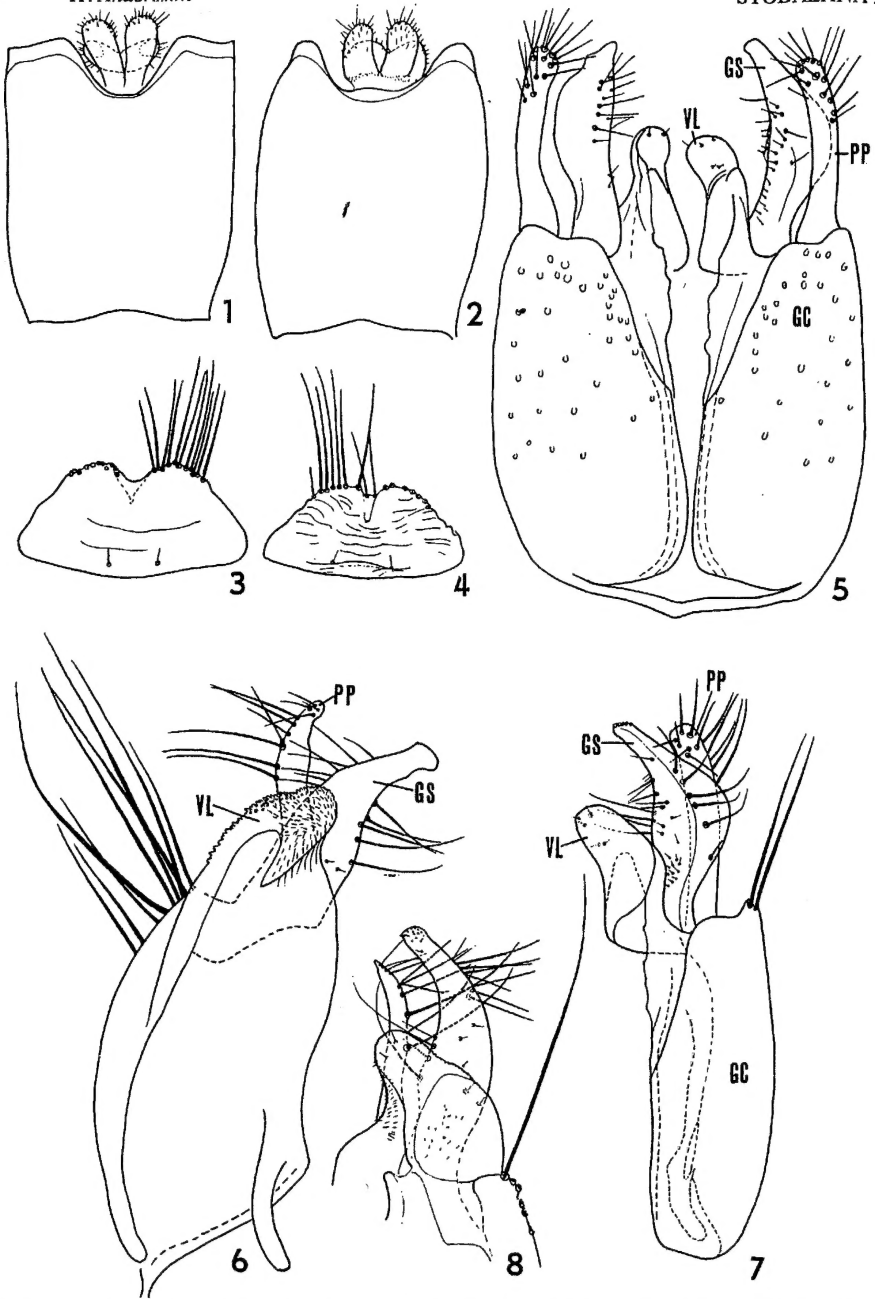
Acrosathe baltica sp. n.

Figs. 2, 4, 5, 7, 9, 12, 15, 18, 22–24.

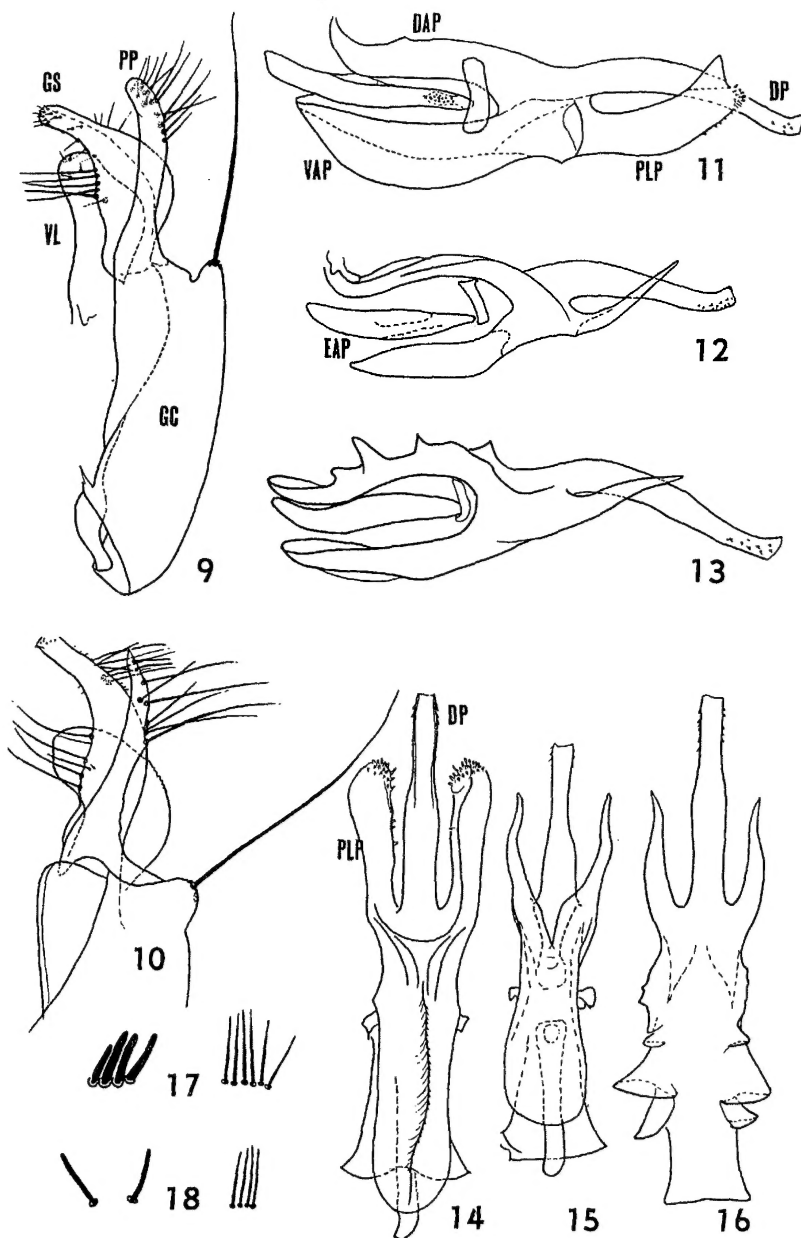
Type material: *Holotype*: ♂, Sweden, Gotland, Gotska Sandön, 1922–23, A. Jansson. — *Paratypes*: 1♂ 3♀, same data as holotype; 2♂ 1♀, Gotland, Fårö, Ulla Hau, 3–16.VI.1987 (1♂ 1♀), 16.VI–27.VIII.1987 (1♂), M. Sörensson. Types in Zoological Museum, Lund.

Etymology: The name derives from the type localities: islands in the Baltic Sea.

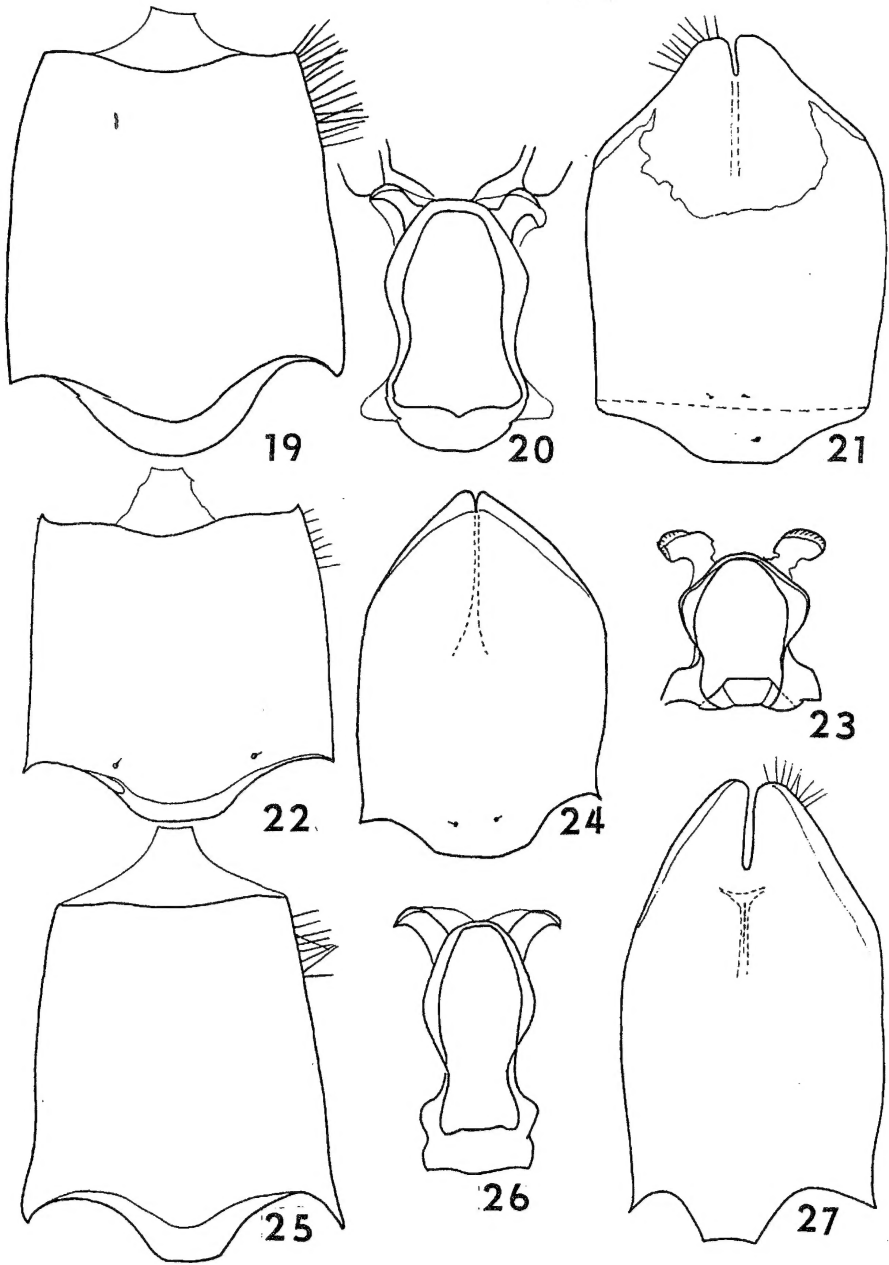
Diagnosis: *Acrosathe baltica* n. sp. is closely related to *A. sybarita* Loew. It differs from *sybarita* by a smooth, not dentated dorsal



Figs. 1-8. — 1, 3, 6. *Acrosathe annulata* Fabr. (SE: Sk. Sandhammaren). — 2, 4, 5, 7. *A. baltica* n. sp. (Paratype: S: Go. Ulla Hau). — 8. *A. sybarita* Loew. (I: Firenze, Cascine). — 1-2. Epandrium and cerci, dorsal view. — 3-4. Male sternite 8, ventral view. — 5. Hypandrium, ventral view. — 6-7. Gonocoxites with appendages, internal view. Most of the bristles on gonocoxa omitted. — 8. Appendages of gonocoxa. — GC - gonocoxa; GS - gonostyle; PP - parameral process; VL - ventrale lobe.



Figs. 9–18. — 9, 12, 15, 18. *Acrosathe baltica* n. sp. (Paratype: SE: Go. Ulla Hau). — 10, 13, 16. *A. sybarita* Loew. (I: Firenze, Cascine). — 11, 14, 17. *A. annulata* Fabr. (S: Sk. Sandhammaren). — 9–10. Gonocoxa resp. apex of gonocoxa with appendages, external view, most of the bristles of the gonocoxa omitted. — 11–13. Aedeagus, lateral view. — 14–15. Aedeagus, ventral view. — 16. Aedeagus, dorsal view. — 17. Digging spines of female tergite 10. — DAP - dorsal aedeagal apodeme; EAP - ejaculatory apodeme; PLP - posterolateral process of aedeagus; VAP - ventral aedeagal apodeme. - A - posterodorsal digging spines; B - anterolateral digging spines.



Figs. 19–27. — 19–21. *Acrosathe annulata* Fabr. (SE: Sk. Sandhammaren). — 22–24. *A. baltica* n. sp. (Paratype: S: Go. Ulla Hau). — 25–27. *A. sybarita* Loew. (I: Pisa, Tirvenia). — 19, 22, 25. Female tergite 8. — 20, 23, 26. Vaginal apodem. — 21, 24, 27. Female sternite 8.

aedeagal apodeme (Fig. 12, cf Fig. 13), by the gonostylus distinctly broadened at middle, by parameral process thicker and not so sharply pointed at apex and by ventral lobe smooth, not granulated on the dorsal margin (Fig. 7 cf. Fig. 8). The female of *baltica* differs from *sybarita* and *annulata* in having the small erect hairs on abdominal segments 6–8 white instead of black. The upper frons and the vertex are distinctly brown as in *annulata*, not grey as in *sybarita*. The male of *baltica* differs from *annulata* in the sharply pointed posterolateral processes of aedeagus (Fig. 12, cf Fig. 11) and the rounded posterolateral margins of the epandrium (Fig. 2, cf Fig. 1).

Description

The new species *Acrosathe baltica* fit the description of the genus (Lyneborg 1986:102). In its general features it is similar to *annulata*. In the following description only characteristics by which it is similar or dissimilar to *annulata* and/or *sybarita* will be treated.

Male. — Frons above the antennae with shorter, proclinate, white pile as in *annulata*; in *sybarita* this pile is longer, erect and partly (behind) black.

Mesonotum with white pile as in *annulata*; in *sybarita* the white pile is mixed with black hairs, especially on the central part of the anterior half.

Anterior femora with usually 1 (0–2) *av*; in *annulata* 2 (0–3) *av* and in *sybarita* 2 *av*. Middle femora without *av*; in *annulata* usually 2 (1–2) and in *sybarita* 2 (?) *av*. Hind femora with 4–5 *av*; in *annulata* and *sybarita* 5–6 *av*.

Epandrium with rounded posterolateral margins (Fig. 2); in *annulata* they are square (Fig. 1) and in *sybarita* not quite so sharply rounded. These differences in the epandrium can usually be seen without preparation. The ventral lobe (Fig. 7 VL) is slender with smooth dorsal margin and without vestiture of small microchaetae. In *annulata* and *sybarita* VL is shorter and broader with rugulose dorsal margin and with microchaetae on the internal (*annulata*, Fig. 6) or ventral (*sybarita*, Fig. 8) surface. The gonostyle (Fig. 7 GS) is very broad at middle; in *annulata* and *sybarita* distinctly slender. The parameral process (Fig. 7 PP) is rather thick and apically blunt; in *annulata* and *sybarita* PP is slender and in *sybarita* very acute at apex. The posterolateral processes of aedeagus (Figs. 12, 15 PLP) are slender and sharply pointed as in *sybarita* (Figs. 13, 16). In *annulata* PLP are blunt and with a dorsal triangular extension (Figs. 11, 14). The dorsal aedeagal apodeme (Figs. 12, 15 DAP) is slender without any dentations as in *sybarita* (Figs. 13, 16). The ventral aedeagal apodeme (Figs. 12, 15 VAP) is smaller and short. The ejaculatory apodeme (Fig. 12 EAP) is short and rather straight; in *sybarita* (Fig. 13) it is longer and apically upcurved.

Female. — Anterior part of frons has grey toment and white pile; the posterior part is chocolate brown with

short, black setae as in *annulata*. In my specimen of *sybarita* the whole frons is grey with only very weak indications of a brownish band at middle.

Mesonotum with adpressed white pile and longer, erect white hairs some of which are brownish. In *annulata* the adpressed pile is white but the longer, erect hairs are brown to black all over. The adpressed pile in *sybarita* is white at sides but brown along a middle stripe and the erect hairs are brown.

Middle femora have no *av*; in *annulata* there are 2–3 *av*.

The abdominal segments 1–7 have a thick, grey toment. On segments 2–4 there is an anterior area with black toment. On tergite 2 the black area reaches at middle about 2/3 of the length of the tergite; the black area is gradually narrowing towards the sides and does not reach the margins of the tergite. The black area of tergite 3 has about the same relative length but it reaches as a narrow brown band the lateral margins of the tergite. On tergite 4 the visible black area is about as broad as the grey area; it reaches the lateral margins of the tergite for about 1/4 of the length of the tergite. Tergites 5–7 are without significant darkening, possibly the extreme hind margins are somewhat brownish. Segment 8 is subshining with a very faint grey toment. In *annulata* the dark bands are narrower, about half the length of the visible part of the tergite. In *sybarita* the central part of tergite 1 is brownish. On tergites 2–3 the black spots are more circular and covers more than 3/4 of the length of the tergites. The spot of tergite 2 is halfcircular and laterally so restricted that it does not at all reach the downbent part of the tergite. The spot on tergite 3 reaches laterally the downbent parts of the tergite. The spot on tergite 4 is more transverse and narrowly reaches the sidemargins of the tergite. In *baltica* the grey parts of tergites 1–4 have an adpressed white pile but on the central disk of tergite 1 there is dark brown adpressed pile. The adpressed pile on the black spots of tergites 2–4 is dark brown. At the sides of T 1–2 there is a longer more or less erect white pile. T 5–8 and lateral parts of T 4 have numerous short erect white hairs. S 2–3 have longer white erect hairs while S 4–8 have short erect white hairs. The pile in *annulata* and *sybarita* is the same except that the short erect hairs on segment 4–8 are quite black. The posterodorsal digging spines of *baltica* on T 10, 6–7 on each side, are dark, moderately long and stout. The anterolateral digging spines on T 10 are about 4–5. weak, pale, slender and at most as long as the posterodorsal ones (Fig. 18). In *annulata* and *sybarita* the posterodorsal spines are relatively shorter and stouter, about 7, and the anterolateral ones are 6, strong, black and distinctly longer than the posterodorsal ones (Fig. 17). The vaginal apodeme of *baltica* (Fig. 23) is much shorter and broader than that of *annulata* and *sybarita* (Figs. 20, 26). Also T 8 and S 8

are shorter than in *annulata* and *sybarita* (Figs. 22, 24 cf Figs. 19, 21 resp. 25, 27).

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